ABC of labour care
Unusual presentations and positions and multiple pregnancy

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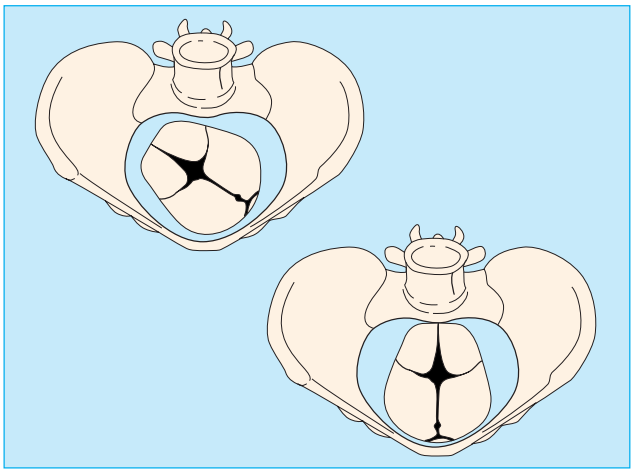
In the vast majority of deliveries near term the fetus presents by the head, with the best fit into the lower pelvis in the occipito-anterior position. However, although the head is presenting, it may be not in an occipito-anterior but in an occipito-posterior or transverse position. In a few cases the head is grossly deflexed so that the brow or even the face can present.

In other instances, it is not the head that is at the lower pole of the uterus but the buttocks, or breech (from the old English brec—breeches or buttocks). The fetus many even lie transversely so that no pole is in relation to the pelvic inlet. A fetus in this position is undeliverable vaginally; both transverse lies and breech presentations are much more common if the woman enters labour in the earlier weeks of pregnancy (22-28 weeks of gestation).

All these malpresentations and malpositions need careful diagnosis and skilful management.

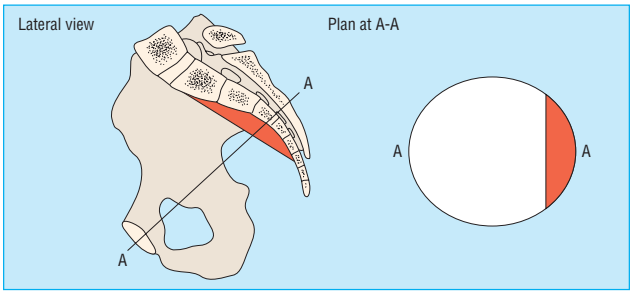


Fetal head engages in left occipito-anterior position (top) then descends into mid-cavity and rotates to full occipito-anterior (bottom)

Malpositions

Normal mechanism

Usually the fetal head engages in the left (less commonly, right) occipito-anterior position and then undergoes a short rotation to be directly occipito-anterior in the mid-cavity.



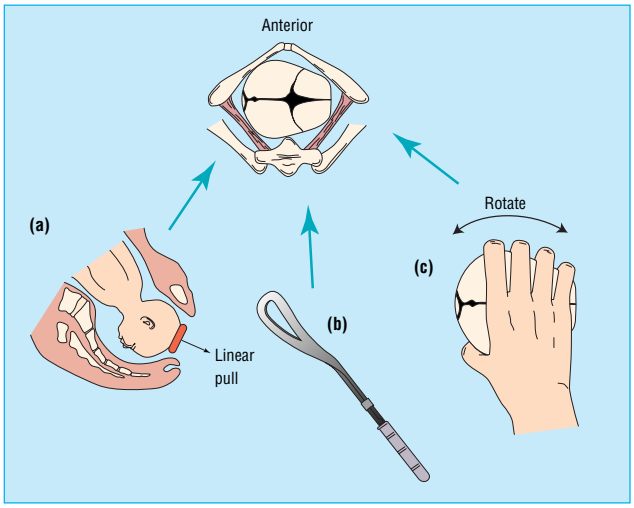
If, instead of the normal curve, the sacrum is straightened (shaded area), the anterior-posterior diameter in mid-cavity is reduced (A-A), thus hindering head rotation in this zone

Occipito-posterior position

This is the commonest malpresentation. The head engages in the left or right occipito-transverse position, and the occiput rotates posteriorly, rather than into the more favourable occipito-anterior position. The reasons for the malrotation are often unclear. A flat sacrum or a head that is poorly flexed may be responsible; alternatively, poor uterine contractions may not push the head down into the pelvis strongly enough to produce correct rotation; epidural analgesia might sometimes relax the pelvic floor to an extent that the fetal occiput sinks into it rather than being pushed to rotate in an anterior direction. The diagnosis is determined clinically by vaginal examination.

The best management is to await events, preparing the woman and staff for a long labour. Progress should be monitored by abdominal and vaginal assessment, and the mother's condition should be watched closely. Good pain relief with an epidural and adequate hydration are required.

The mother may have an urge to push before full dilation, but the midwife should discourage this. If the occiput comes directly into the posterior position (face to pubis) a vaginal delivery is possible if the pelvic diameters are reasonable.



Three methods of delivering a baby in occipito-transverse position in the second stage of labour: *(a)* vacuum extraction with a linear pull, so allowing rotation to occur according to the pelvic anatomy; *(b)* rotation and extraction with Kielland's (straight) forceps; or *(c)* manual rotation of head and then forceps applied immediately, once occipito-anterior position is achieved

Occipito-transverse position

The head engages in the left or right occipito-transverse position, but then rotation to occipito-anterior fails to occur and the head remains in the transverse position. If the second stage is reached the head must be manually rotated, rotated with appropriate forceps (namely, those with no pelvic curve—for example, Kielland's forceps), or delivered using vacuum extraction.

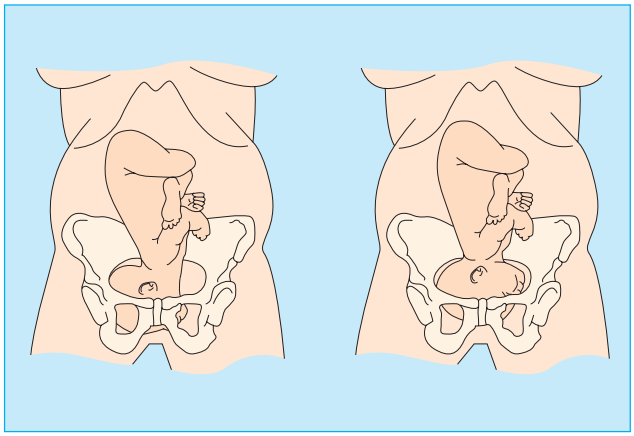
Such vaginal deliveries must not be undertaken if there is any acidosis (fetal blood pH <7.15) as cerebral haemorrhage may result. They are now often undertaken in the operating theatre (trial of forceps) so that a rapid change to caesarean

section can be made if there is any difficulty. Some obstetricians have abandoned these more difficult vaginal deliveries in favour of caesarean section.

Face and brow positions

If there is a complete extension of the fetal head, the face will present for delivery. Labour will be longer, but if the pelvis is adequate and the head rotates to a mentoanterior position, a vaginal delivery can be expected. If the head rotates backwards to a mentoposterior position a caesarean section is needed.

In a brow presentation the fetal head stays between full extension and full flexion so that the biggest diameter (the mento-vertex 13 cm) presents. This is usually only diagnosed once labour is well established. Unless the head flexes, a vaginal delivery is not possible, and a caesarean section is required.



Left: Abdominal features of a face presentation; the head is felt on the same side as the back and is often not engaged. Right: Abdominal features of a brow presentation—both the sinciput and the occiput are equally palpable on each side of the lower abdomen; the head is commonly not engaged

Malpresentations

Breech

This is the commonest malpresentation. It is usually discovered before labour, although one third are not diagnosed until during labour, when vaginal examinations allow a more precise diagnosis to be made, especially as the cervix dilates and allows direct palpation of the presenting part of the fetus. Current opinion holds that in late pregnancy, external cephalic version should be offered, with the use of tocolytics in nulliparous women to relax the uterus. This procedure is successful in 40% of nulliparous women, and 60% of multiparous women if performed after 38 weeks. If breech presentation persists, preparations for delivery are made. Delivery should be in a hospital with an experienced midwife and obstetrician actively involved. An anaesthetist and paediatrician should be available.

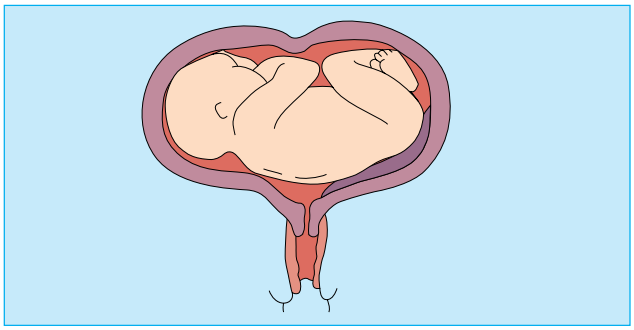
With a normal pelvis and the fetus's weight estimated by ultrasonography to be 2500-4000 g, assisted breech delivery in experienced hands is probably as safe as a caesarean section. These days many women with a breech presentation choose to have a caesarean section as they think this is the safest method of delivery. In the past doctors have led them to believe this, but meta-analyses of randomised controlled trials do not substantiate this view. Of those women who aim for a vaginal delivery, about half will succeed. Before 32 weeks, caesarean section is commonly performed for a breech presentation, although the evidence of its effectiveness even at this gestation is not strong; the operation can be technically difficult, leading to maternal complications (see next article).

Breech delivery is an art that all those practising obstetrics need to learn, with supervision by senior practitioners, because unexpected breech deliveries still occur.

All women with malpresentations and malpositions should be delivered in hospital

Transverse lie

When the fetus is lying sideways with the head in one flank and the buttocks in the other, it cannot be born vaginally. Unless it converts or is converted in late pregnancy, a caesarean section is required. After opening the abdominal wall, the surgeon may be able through the wall of the uterus to rotate the fetus so that it then becomes a longitudinal lie. If not, the uterine incision must be so placed transversely to allow access to a fetal pole.



Transverse lie with subseptate uterus and low lying placenta

Vaginal delivery of breech presentation

- The mother should be in the lithotomy position (laterally tilted to avoid supine hypotension)
- The bladder should be emptied
- An anaesthetist and a paediatrician should be present
- An episiotomy is advisable
- The breech, legs, and abdomen should be allowed to deliver spontaneously (the legs can be assisted by flexing)
- The shoulders can be encouraged to deliver by rotation of the trunk (Lövsett's manoeuvre)
- Delivery of the head should be controlled manually or with forceps

Prolapsed umbilical cord

If the presenting part of the fetus does not fit the pelvis after membrane rupture, the umbilical cord can slip past and present at the cervix, or actually prolapse into the vagina. If such an event is diagnosed in labour, the woman should be transferred straight to a hospital, preferably in a steep lateral or knee chest

Nowadays internal podalic version is not often attempted in transverse lies; a caesarean section is thought to be safer, although it can be a difficult operation

position with a midwife holding up the presenting part with fingers in the vagina, to stop it compressing the umbilical cord during contractions. A caesarean section is needed urgently.

If the cord is found ahead of the presenting part before membrane rupture, the membranes should be ruptured artificially only if full preparations for an emergency caesarean section have been made. The cord often slips to one side of the head and disappears when the membranes rupture.

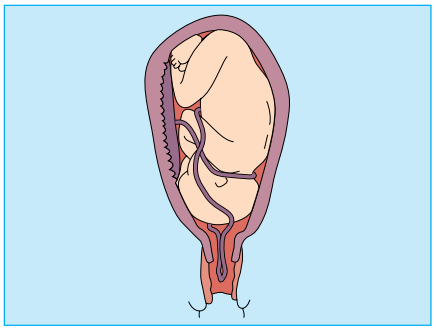
Shoulder dystocia

After delivery of the head the hardest part of delivery is usually over, but occasionally the shoulders are slightly broader than usual, with a bisacromial diameter greater than 10 cm. The shoulders usually adopt the antero-posterior axis to negotiate the outlet. If the shoulders are still above the brim at this stage, no advance occurs. The baby's chest is trapped within a vaginal cuirass. Although the nose and mouth are outside, the chest cannot expand with respiration. There is currently no way of predicting this problem reliably. The fifth annual report from the confidential inquiry into stillbirths and deaths in infancy (1998) considers the problem well.

Multiple pregnancies

Multiple pregnancies are increasing in frequency in Britain, mainly as a result of infertility treatment (both ovarian stimulation and in vitro fertilisation). Nearly all multiple pregnancies are now diagnosed early by ultrasound examination. Some twins, however, die and are absorbed in the first half of pregnancy (the disappearing twin syndrome). When pregnant with twins, most women go into labour early at about 37 weeks. The woman should be in labour in a hospital with a special care baby unit. With no complicating factors, the mother can go into spontaneous labour provided that the first twin is lying longitudinally. It is wise to have an intravenous line running. Labour usually proceeds rapidly; although each fetus is small, the total content of the uterus is large. The fetal heart rates of each twin should be monitored separately; some cardiotocographs allow this to be shown on a single chart. An anaesthetist should be present at delivery, and an epidural makes delivery of the second twin easier if there is a malpresentation (which occurs in 5-15% of cases). Paediatricians also should be present at the second stage of labour.

After the first twin is delivered, the cord should be clamped and the lie of the second twin assessed carefully. This can be done clinically, but ultrasound scanning is more reliable. If the lie is not longitudinal, it should be made so by an external cephalic or internal podalic version. Unless uterine contractions return within 15 minutes, stimulation of the uterus with dilute oxytocin should be started, with an aim of delivering the second twin 25-45 minutes after the first. If there is any difficulty in delivery of the second twin, or if this twin develops a bradycardia, a vacuum extraction (in a cephalic presentation) or a breech extraction, if the fetus is lying the other way, can be performed. Internal podalic version and breech extraction is usually easy in this situation. It is not necessary to resort automatically to a caesarean section.



Prolapsed cord into the vagina after membrane rupture with a high head

Shoulder dystocia: best delivery method

- Flex and abduct the mother's thighs as much as possible (the McRoberts procedure) and then depress the baby's head towards the mother's anus, with an assistant applying suprapubic pressure
- If this does not work, then manual rotation of the baby through 180° by vaginal and abdominal pressure may succeed
- Cleidotomy or symphysiotomy is the last resort and should be attempted only by an experienced obstetrician

Multiple births in United Kingdom, 1995

Type of multiple birth	No of multiple births (rate per 1000 maternities*)	Ratio of multiple to singleton births
Twins	9 889 (13.6)	1:73
Triplets	318 (0.4)	1:2282
Quadruplets	10 (0.0001)	1:72 563
Total	10 217 (14.0)	1:71

Data supplied by Multiple Births Foundation.

*A maternity is any pregnancy that results in the birth of at least one live baby; the total number of maternities in 1995 was 725 638.

Conclusions

- Women with a fetus with an abnormal presentation or position should be transferred to hospital for the best care
- Problem cases should be anticipated
- Emergencies during an apparently normal labour need the immediate attention of a skilled obstetrician
- Prepared protocols ensure that all members of the labour ward team know their function and what should be done

Key references

- Johnstone F, Myerscough P. Shoulder dystocia. *Br J Obstet Gynaecol* 1998;105:811-5.
- Hofmeyr J. Planned elective caesarean section for term breech. In: Cochrane Collaboration. *Cochrane Library*. Issue 4. Oxford: Update Software, 1997.

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The ABC of Labour Care is edited by Geoffrey Chamberlain, emeritus professor of obstetrics and gynaecology at the Singleton Hospital, Swansea. It will be published as a book in the summer.

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